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machine language situations. Condition codes are hardware-specific but usually include carry, overflow, zero result, and negative result codes. *See also* conditional branch.

conditioning *n.* The use of special equipment to improve the ability of a communications line to transmit data. Conditioning controls or compensates for signal attenuation, noise, and distortion. It can be used only on leased lines, where the path from sending to receiving computer is known in advance.

conductor *n.* A substance that conducts electricity well. Metals are good conductors, with silver and gold being among the best. The most commonly used conductor is copper. *Compare* insulator, semiconductor.

Conference on Data Systems Languages *n.* *See* CODASYL.

CONFIG.SYS *n.* A special text file that controls certain aspects of operating-system behavior in MS-DOS and OS/2. Commands in the CONFIG.SYS file enable or disable system features, set limits on resources (for example, the maximum number of open files), and extend the operating system by loading device drivers that control hardware specific to an individual computer system.

configuration *n.* **1.** In reference to a single microcomputer, the sum of a system's internal and external components, including memory, disk drives, keyboard, video, and generally less critical add-on hardware, such as a mouse, modem, or printer. Software (the operating system and various device drivers), the user's choices established through configuration files such as the AUTOEXEC.BAT and CONFIG.SYS files on IBM PCs and compatibles, and sometimes hardware (switches and jumpers) are needed to "configure the configuration" to work correctly. Although system configuration can be changed, as by adding more memory or disk capacity, the basic structure of the system—its architecture—remains the same. *See also* AUTOEXEC.BAT, CONFIG.SYS. **2.** In relation to networks, the entire interconnected set of hardware, or the way in which a network is laid out—the manner in which elements are connected.

configuration file *n.* A file that contains machine-readable operating specifications for a piece of hardware or software or that contains information on another file or on a specific user, such as the user's logon ID.

congestion *n.* The condition of a network when the current load approaches or exceeds the available resources and bandwidth designed to handle that load at a particular

location in the network. Packet loss and delays are associated with congestion.

connect charge *n.* The amount of money a user must pay for connecting to a commercial communications system or service. Some services calculate the connect charge as a flat rate per billing period. Others charge a varying rate based on the type of service or the amount of information being accessed. Still others base their charges on the number of time units used, the time or distance involved per connection, the bandwidth of each connected session, or some combination of the preceding criteria. *See also* connect time.

connection *n.* A physical link via wire, radio, fiberoptic cable, or other medium between two or more communications devices.

connection-based session *n.* A communications session that requires a connection to be established between hosts prior to an exchange of data.

connectionism *n.* A model in artificial intelligence that advocates using highly parallel, specialized processes that compute simultaneously and are massively connected. Thus, the connectionist approach would not use a single high-speed processor to compute an algorithm, but would break out many simple specialized processing elements that are highly connected. Neural networks are classic examples of connectionism in that each "neuron" in the network may be assigned to a single processor. *See also* algorithm, artificial intelligence, neural network.

connectionless *adj.* In communications, of, pertaining to, or characteristic of a method of data transmission that does not require a direct connection between two nodes on one or more networks. Connectionless communication is achieved by passing, or routing, data packets, each of which contains a source and destination address, through the nodes until the destination is reached. *See also* node (definition 2), packet (definition 2). *Compare* connection-oriented.

connectionless session *n.* A communications session that does not require a connection to be established between hosts prior to an exchange of data.

connection-oriented *adj.* In communications, of, pertaining to, or characteristic of a method of data transmission that requires a direct connection between two nodes on one or more networks. *Compare* connectionless.

connection pooling *n.* A resource optimization feature of ODBC (Open Database Connectivity) 3 that results in

IntelliSense *n.* A Microsoft technology used in various Microsoft products, including Internet Explorer, Visual Basic, Visual Basic C++, and Office that is designed to help users perform routine tasks. In Visual Basic, for example, information such as the properties and methods of an object is displayed as the developer types the name of the object in the Visual Basic code window.

Intensity Red Green Blue *n.* See IRGB.

interactive *adj.* Characterized by conversational exchange of input and output, as when a user enters a question or command and the system immediately responds. The interactivity of microcomputers is one of the features that makes them approachable and easy to use.

interactive fiction *n.* A type of computer game in which the user participates in a story by giving commands to the system. The commands given by the user determine, to some extent, the events that occur during the story. Typically the story involves a goal that must be achieved, and the puzzle is to determine the correct sequence of actions that will lead to the accomplishment of that goal. See also adventure game.

interactive graphics *n.* A form of user interface in which the user can change and control graphic displays, often with the help of a pointing device such as a mouse or a joystick. Interactive graphics interfaces occur in a range of computer products, from games to computer-aided design (CAD) systems.

interactive processing *n.* Processing that involves the more or less continuous participation of the user. Such a command/response mode is characteristic of microcomputers. Compare batch processing (definition 2).

interactive program *n.* A program that exchanges output and input with the user, who typically views a display of some sort and uses an input device, such as a keyboard, mouse, or joystick, to provide responses to the program. A computer game is an interactive program. Compare batch program.

interactive services *n.* See BISDN.

interactive session *n.* A processing session in which the user can more or less continuously intervene and control the activities of the computer. Compare batch processing (definition 2).

interactive television *n.* A video technology in which a viewer interacts with the television programming. Typical uses of interactive television include Internet access, video

on demand, and video conferencing. See also video conferencing.

interactive TV *n.* See iTV.

interactive video *n.* The use of computer-controlled video, in the form of a CD-ROM or videodisc, for interactive education or entertainment. See also CD-ROM, interactive, interactive television, videodisc.

interactive voice response *n.* A computer that operates through the telephone system, in which input commands and data are transmitted to the computer as spoken words and numbers or tones and dial pulses generated by a telephone instrument; and output instructions and data are received from the computer as prerecorded or synthesized speech. For example, a dial-in service that provides airline flight schedules when you press certain key codes on your telephone is an interactive voice response system. Also called: IVR.

Interactive voice system *n.* See interactive voice response.

interapplication communication *n.* The process of one program sending messages to another program. For example, some e-mail programs allow users to click on a URL within the message. After the user clicks on the URL, browser software will automatically launch and access the URL.

interblock gap *n.* See inter-record gap.

Interchange File Format *n.* See .iff.

Interchange Format *n.* See Rich Text Format.

interconnect *n.* 1. See System Area Network. 2. An electrical or mechanical connection. Interconnect is the physical connection and communication between two components in a computer system.

interface *n.* 1. The point at which a connection is made between two elements so that they can work with each other or exchange information. 2. Software that enables a program to work with the user (the user interface, which can be a command-line interface, menu-driven interface, or a graphical user interface), with another program such as the operating system, or with the computer's hardware. See also application programming interface, graphical user interface. 3. A card, plug, or other device that connects pieces of hardware with the computer so that information can be moved from place to place. For example, standardized interfaces such as RS-232-C standard and

Inverted list *n.* A method for creating alternative locators for sets of information. For example, in a file containing data about cars, records 3, 7, 19, 24, and 32 might contain the value “Red” in the field COLOR. An inverted list (or index) on the field COLOR would contain a record for “Red” followed by the locator numbers 3, 7, 19, 24, and 32. *See also* field, record. *Compare* linked list.

Inverted-list database *n.* A database similar to a relational database but with several differences that make it much more difficult for the database management system to ensure data consistency, integrity, and security than with a relational system. The rows (records or tuples) of an inverted-list table are ordered in a specific physical sequence, independent of any orderings that may be imposed by means of indexes. The total database can also be ordered, with specified logical merge criteria being imposed between tables. Any number of search keys, either simple or composite, can be defined. Unlike the keys of a relational system, these search keys are arbitrary fields or combinations of fields. No integrity or uniqueness constraints are enforced; neither the indexes nor the tables are transparent to the user. *Compare* relational database.

Inverted structure *n.* A file structure in which record keys are stored and manipulated separately from the records themselves.

Inverter *n.* **1.** A logic circuit that inverts (reverses) the signal input to it—for example, inverting a high input to a low output. **2.** A device that converts direct current (DC) to alternating current (AC).

Invoke *vb.* To call or activate; used in reference to commands and subroutines.

I/O *n.* *See* input/output.

I/O-bound *adj.* *See* input/output-bound.

I/O controller *n.* *See* input/output controller.

I/O device *n.* *See* input/output device.

Ion-deposition printer *n.* A page printer in which the image is formed in electrostatic charges on a drum that picks up toner and transfers it to the paper, as in a laser, LED, or LCD printer, but the drum is charged using a beam of ions rather than light. These printers, used mainly in high-volume data-processing environments, typically operate at speeds from 30 to 90 pages per minute. In ion-deposition printers, toner is typically fused to paper by a method that is fast and does not require heat but leaves the paper a little glossy, making it unsuitable for business cor-

respondence. In addition, ion-deposition printers tend to produce thick, slightly fuzzy characters; the technology is also more expensive than that of a laser printer. *See also* electrophotographic printers, nonimpact printer, page printer. *Compare* laser printer, LCD printer, LED printer.

I/O port *n.* *See* port¹ (definition 1).

I/O processor *n.* *See* input/output processor.

IO.SYS *n.* One of two hidden system files installed on an MS-DOS startup disk. IO.SYS in IBM releases of MS-DOS (called IBMBIO.COM) contains device drivers for peripherals such as the display, keyboard, floppy disk drive, hard disk drive, serial port, and real-time clock. *See also* MSDOS.SYS.

IP *n.* Acronym for **Internet Protocol**. The protocol within TCP/IP that governs the breakup of data messages into packets, the routing of the packets from sender to destination network and station, and the reassembly of the packets into the original data messages at the destination. IP runs at the internetwork layer in the TCP/IP model—equivalent to the network layer in the ISO/OSI reference model. *See also* ISO/OSI reference model, TCP/IP. *Compare* TCP.

IP address *n.* Short for **Internet Protocol address**. A 32-bit (4-byte) binary number that uniquely identifies a host (computer) connected to the Internet to other Internet hosts, for the purposes of communication through the transfer of packets. An IP address is expressed in “dotted quad” format, consisting of the decimal values of its 4 bytes, separated with periods; for example, 127.0.0.1. The first 1, 2, or 3 bytes of the IP address identify the network the host is connected to; the remaining bits identify the host itself. The 32 bits of all 4 bytes together can signify almost 2^{32} , or roughly 4 billion, hosts. (A few small ranges within that set of numbers are not used.) *Also called:* Internet Protocol number, IP number. *See also* host, IANA, ICANN, InterNIC, IP, IP address classes, packet (definition 2). *Compare* domain name.

IP address classes *n.* Short for **Internet Protocol address classes**. The classes into which IP addresses were divided to accommodate different network sizes. Each class is associated with a range of possible IP addresses and is limited to a specific number of networks per class and hosts per network. *See the table.* *See also* Class A IP address, Class B IP address, Class C IP address, IP address.